Amendment/Response

Reply to Office Action of March 24, 2005

This listing of claims replaces all prior versions, and listings, of claims in the application:

Listing of claims:

1. (original) An apparatus, comprising:

a substrate;

an electrically conducting film deposited on said substrate, wherein said film is a metal other than Cr, or said film is a metallic alloy other than Cr-alloy when said substrate is Ge or Si, or a multilayered film which includes at least one metallic layer;

wherein said substrate consists essentially of a substrate material which forms a bond with said film; and

wherein said deposition is in at least a high vacuum environment.

2. (original) An apparatus according to claim 1, wherein said substrate material is selected from the group consisting of Ge, Si, As, B, Bi, C, Ga, Se, Te, Fe, Al, W, Mo, Ta, Nb, V, Hf, Zr, Re, semiconducting compounds, halides, and co-deposited mixtures of incompatible systems.

3. (original) An apparatus according to claim 2, wherein said film is a material selected from the group consisting of Mn, Ag, Fe, and Cu.

4. (original) An apparatus according to claim 2, wherein said film is a material selected from the group consisting of Mn, Ag, Fe, Al, Au, Ni, Pd, Pt, Co, and their alloys.

5. (original) An apparatus according to claim 2, further comprising an overlayer on said conducting film, wherein said overlayer is selected from the group consisting of Ge, Si, As, B, Bi, C, Ga, Se, Te, Fe, Al, W, Mo, Ta, Nb, V, Hf, Zr, Re, semiconducting compounds, halides, and co-deposited mixtures of incompatible systems.

6. (original) An apparatus according to claim 1, wherein said film is a material selected from the group consisting of Mn, Ag, Fe, and Cu.

7. (original) An apparatus according to claim 1, wherein said film is a material selected from the group consisting of Mn, Ag, Fe, Al, Au, Ni, Pd, Pt, Co, and their alloys.

8. (original) An apparatus according to claim 1, wherein said film is less than about 0.2 nm thick and has an electrical resistance of less than $4x10^{-6}$ Ohm•m.

9. (original) An apparatus according to claim 6, in which said substrate is less than 5 nm thick.

10. (original) An apparatus according to claim 1, wherein said substrate material forms a metastable bond.

11. (original) An apparatus according to claim 1, wherein said vacuum environment has a base pressure reduced to a value below 10^{-5} Torr.

12. (original) An apparatus according to claim 1, wherein said vacuum environment has a base pressure reduced to a value below 10^{-6} Torr.

13. (original) An apparatus according to claim 1, wherein said vacuum environment has a base pressure reduced to a value below 10^{-7} Torr.

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